

APPENDIX 2

ECS Forest Stand Delineation



**FOREST STAND DELINEATION REPORT
MARYLAND SOLAR SITE 1: SHUGART VALLEY PLACE**

CHARLES COUNTY, MARYLAND

ECS PROJECT NO. 47: 4209

FOR

**MD SOLAR 1, LLC
(c/o H&B Solutions)**

SEPTEMBER 20, 2017



September 20, 2017

Mr. Jean David
MD Solar 1, LLC (c/o H&B Solutions)
800 Brickell Avenue
Suite 1100
Miami, Florida

ECS Project No. 47:4209

Reference: Forest Stand Delineation Report
MD Solar 1 Property
Shugart Valley Place
La Plata, Maryland

ECS Mid-Atlantic, LLC (ECS) is pleased to present this Forest Stand Delineation Report for the above-referenced project in general accordance with ECS Proposal No. 47:4079-EPR, dated April 5, 2017. Charles County requires forest stand delineation plans be submitted to the County as part of the proposed development of the site. County requirements for the forest stand delineation submittal are presented in the Methods section.

PROPERTY DESCRIPTION

The MD Solar 1 Property consists of approximately 540 acres located along Shugart Valley Place in La Plata, Charles County, Maryland. These areas consist primarily of wooded areas with some existing residences, agricultural areas, and associated structures. The surrounding parcels are in residential and/or agricultural use or undeveloped and wooded.

The wooded areas onsite are somewhat disconnected from primary forested areas, part of the patchwork nature of the rural agricultural landscape of the surrounding area. The disturbance of the land over the years, including farming practices and periodic selective logging, has left the property less than ideal to support habitat for wildlife due to the resulting fragmentation.

SECONDARY INFORMATION

Secondary Information entails the background research and review of recorded data and mapping pertaining to the project site. Resources include but are not limited to:

- U.S. Geological Survey (USGS) Topographic Map, Indian Head, MD Quadrangle, 2017
- Charles County Website and Mapping;

- Natural Resources Conservation Service (NRCS) online soils database; <http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=MD>
- Available aerial photography and GIS information; NETR Online <http://www.historicaerials.com/> , Google Earth

The USGS Indian Head Quadrangle map shows elevations of approximately 50 to 110 feet above mean sea level (MSL) throughout the site. The soil survey indicates that the site is underlain primarily by the soil units listed in Table 1 below.

Table 1 – Soil Units Onsite

Soil Unit	Hydric Rating
BaB/C: Beltsville silt loam	5
BcA: Beltsville-Aquasco complex	5
BgB: Beltsville-Grosstown-Woodstown complex	5
GgB: Grosstown gravelly silt loam	0
GmD/F: Grosstown-Marr-Hoghole complex	10
GwD: Grosstown-Woodstown-Beltsville	5
Is: Issue silt loam, occasionally flooded	10
LQA: Lenni and Quindocqua soils	80
LsA/B: Liverpool silt loam	5
MkB/D/E: Marr-Beltsville complex	0
Pu: Potobac-Issue complex, frequently flooded	70
WdaB: Woodstown sandy loam, Northern Coastal Plain	7
WdC: Woodstown sandy loam	0

METHODS

Charles County requires a forest stand delineation to be prepared by a qualified professional for all new developments 40,000 square feet or greater in size per COMAR Article 17 of the State Code and according to the County FSD Plan Checklist. A Forest Stand Delineation Plan shall include:

- Data collection: forest type, dominant size class, dominant trees, dominant canopy trees, number of trees per acre, number of dead trees per acre, common understory species, forest structure value, percentage of canopy coverage, understory coverage, herbaceous coverage, downed woody material, and invasive species;

- Specimen trees, defined as greater than 30 inches diameter at breast height (DBH), will be located, identified, measured, and their condition assessed;
- Locations of specimen tree critical root zones, forest interior dwelling species, forest stand boundaries, and stand acreages will be recorded; and
- A FSD report shall include:
 - A forest stand summary table comprised of the data collected in the field and mentioned above;
 - Stand summary sheets;
 - A narrative that describes forest stand conditions, methodology, and forest structure;
 - A site location map; and,
 - A site plan that delineates:
 - Natural features such as intermittent and perennial streams and their buffers; steep slope areas and erodible soils; and 100-year floodplain and drainage-way buffers;
 - Topography of existing conditions;
 - Hydric soils;
 - Habitats of rare, threatened and endangered species;
 - Trees designated as a national, state, or local champion;
 - Historic and archeological sites;
 - Trees with a DBH of 30 inches or greater;
 - Limits of forest areas, non-forested areas, and Forest Stand locations

FINDINGS

ECS identified three (3) forest stands located within the project site containing woody vegetation. A forest stand delineation plan is attached showing the general location of these stand types. A stand summary sheet and data sheets for individual plots can also be found attached. Forty-nine specimen trees were identified for this site.

Stand A

Stand A is approximately 17,060,356 square feet (SF) (391.7-acres) in size and is throughout upland portions of the project area. It consists primarily of medium to large sized Tulip Poplar, American Beech, and Oak trees, with an understory of sapling American Beech, American Hornbeam, American Holly, Red Maple, Sweetgum, and Black Gum. Dominant and subdominant species are listed in Table 2 below. Stand density is relatively even in age and size throughout the forest stand. Stand A has a moderate amount of understory growth, a low amount of invasive species (such as Japanese Honeysuckle), and an average basal area of 122 SF per acre (BAF 10). Forty-one specimen trees were located in Stand A.

Table 2 – Dominant Woody Vegetation: Stand A

Common Name	Scientific Name
Dominant Species	
American Beech	<i>Fagus grandifolia</i>
Tulip Poplar	<i>Liriodendron tulipifera</i>
White Oak	<i>Quercus alba</i>
Subdominant Species	
Sweetgum	<i>Liquidambar styraciflua</i>
Black Gum	<i>Nyssa sylvatica</i>
American Hornbeam	<i>Carpinus caroliniana</i>
American Holly	<i>Ilex opaca</i>
Red Maple	<i>Acer rubrum</i>
Willow Oak	<i>Quercus phellos</i>

The overall health of the woodland is fair with some evidence of insect or fungal infestation in isolated areas throughout the Stand. Tree quality appears to be fair for wildlife habitat, providing some food sources and adequate canopy cover. There was some evidence of previous selective logging within this stand. The edges of the forest stand were disturbed by previous site clearing activity and had poorer tree quality and more vines and invasive plants relative to other areas.

Stand B

Stand B is approximately 2,255,531-SF (51.8-ac) in size and is located in distinct patches of previously cleared land within the southern and eastern portions of the site. It consists primarily of medium Loblolly and Virginia Pine with an understory of Sweetgum, Red Maple, and Tulip Poplar. Dominant and subdominant species are listed in Table 3 below. Stand density is relatively even throughout Stand B with a moderate amount of understory growth and some herbaceous and vine growth. Stand B has an average basal area of 192 SF per acre (BAF 10).

Table 3 – Dominant Woody Vegetation: Stand B

Common Name	Scientific Name
Dominant Species	
Loblolly Pine	<i>Pinus taeda</i>
Subdominant Species	
Virginia Pine	<i>Pinus virginiana</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Eastern Red Cedar	<i>Juniperus virginiana</i>
Tulip Poplar	<i>Liriodendron tulipifera</i>
Bigtooth Aspen	<i>Populus grandidentata</i>
Red Maple	<i>Acer rubrum</i>

The overall health of the stand is fair with little evidence of insect or fungal infestation. A low concentration of non-native invasive plants (including Japanese Honeysuckle) is located throughout the stand. No Specimen Trees were located in Stand B. Tree quality appears to be fair for wildlife habitat, providing some food sources and adequate cover. This stand appears to be regrowth or replanting after previous clear cutting, thus explaining the prevalence of smaller conifer trees.

Stand C

Stand C is approximately 2,731,488-SF (62.7-ac) in size and located in the Ward's Run floodplain in the northern and western portions of the site. It consists primarily of medium to large sized Red Maple, American Beech, and Tulip Poplar with an understory of primarily American Hornbeam, Black Gum, and Sweetgum species. Dominant and subdominant species are listed in Table 4 below. Stand density is relatively even throughout Stand C with a moderate amount of understory growth and herbaceous and vine species. Stand C has a basal area of 113 SF per acre (BAF 10).

Table 4 – Dominant Woody Vegetation: Stand C

Common Name	Scientific Name
Dominant Species	
Red Maple	<i>Acer rubrum</i>
American Beech	<i>Fagus grandifolia</i>
Tulip Poplar	<i>Liriodendron tulipifera</i>
Subdominant Species	
Sweetgum	<i>Liquidambar styraciflua</i>
American Hornbeam	<i>Carpinus caroliniana</i>
American Elm	<i>Ulmus americana</i>
River Birch	<i>Betula nigra</i>
American Sycamore	<i>Platanus occidentalis</i>

The overall health of the stand is fair with little evidence of insect or fungal infestation. A moderate concentration of non-native invasive plants (such Japanese Honeysuckle) and native vines (including Virginia creeper and Poison ivy) are located throughout the stand. Eight Specimen Trees were located in Stand C. Tree quality appears to be fair for wildlife habitat, providing some food sources and adequate cover.

OVERALL SUMMARY

Based on our site reconnaissance, the project site contains three (3) different forest stands, one dominated by Beech, Oaks, and Tulip Poplar, the second dominated by Pines, and the third by Red Maple, American Beech, and Tulip Poplar. Forty-nine specimen trees were identified onsite. The stands are in generally fair condition with sapling, pole, medium, and large trees in

good or fair condition. Overall tree quality appears to be fair for wildlife habitat, providing some food sources and cover.

A limited review of historical photographs and topographic maps indicate that the property has been in a mix of wooded and agricultural use since the 1950s. Periodic selective logging of Stand A and some pine plantation farming in the southern portion of Stand B appear to have taken place. Based on this information, preservation of Stand B is not a high priority. Preservation of Stand C and portions of Stand A located on steep slopes may be beneficial for limiting adverse impacts to local streams and water quality.

During construction, standard erosion and sediment control methods (tree protection fencing and/or super silt fencing) should be used to protect any tree conservation areas. Additionally, encroachment into the conservation areas should not take place within the drip-line of the conserved trees. Mulching the perimeter of conservation areas should be incorporated in order to reduce the effects of erosion and sedimentation.

ECS would like to thank MD Solar 1, LLC for the opportunity to provide you with this Forest Stand Delineation. We look forward to assisting you further with this project and other environmental concerns you may have. If you have any questions, please feel free to contact us at any time at 703-471-8400.

Sincerely,

ECS MID-ATLANTIC, LLC


Anna Allie MEM, ISA-CA
Environmental Project Manager
AAllie@ecslimited.com

This Forest Stand Delineation has been prepared in accordance with all State and local ordinances which were in effect as of the date shown below. The undersigned is a qualified professional in accordance with COMAR 08.19.06.01.



James E. Irre

September 20, 2017

Date

FSD DATA SHEETS

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 1 Plot Size: 30' Date: 6/21/17

Basal Area in sq/acre: 130	Size Class of Trees within sample plot															
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			6		2											8
White Oak							1									1
American Holly			4													4
Pignut Hickory							1			1						2
Tulip Poplar			1	1			1			1						4
American Hornbeam			1													1
Red Maple			2													2
Black Gum			1													1
Total Number of Trees per Size Class	15			3			3			2			0			23
Number of standing dead trees 6" dbh or greater																0

1/100 Ac. Samples:															
List of Common Understory Species 3'-20'				% Canopy Coverage				% Invasive Cover							
				C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, American Beech, Red Maple, American Holly				90	75	80	90	85	84	0	0	0	0	0	0
List of Herbaceous Species 0'-3'				% Understory Cover 3'-20'				% Herbaceous/ Woody Cover 0'-3'							
				C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, American Beech, Christmas Fern, American Holly				20	20	40	35	50	33	5	20	40	15	30	22
List of Invasive Species				Plot Successional Stage:											
				Early-successional upland Tulip Poplar Assoc.											

Comments:
 Total number of tree species > 6": 4

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 2 Plot Size: 30' Date: 6/21/17

Tree Species	Size Class of Trees within sample plot															Total			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh						
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH				
American Beech			5		1	2	2						1						11
White Oak							1						1						2
American Holly			9																9
Sweetgum			4																4
Tulip Poplar							1												1
Northern Red Oak							1												1
Red Maple			1																1
Black Gum			4			2													6
Total Number of Trees per Size Class	23			5			5			2			0			35			
Number of standing dead trees 6" dbh or greater				1			1									2			

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, American Beech, Black Gum, American Holly							85	75	85	90	90	85	0	0	0	0	0	0
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, American Beech, American Holly, Wild Chive							30	25	60	30	40	37	5	15	5	5	5	7
List of Invasive Species							Plot Successional Stage:											
							Early-successional upland Tulip Poplar Assoc.											

Comments:
 Total number of tree species > 6": 5

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 3 Plot Size: 30' Date: 6/21/17

Tree Species	Size Class of Trees within sample plot															Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			4		4		2			2						12
American Holly			2													2
Sweetgum						1	2									3
Willow Oak							1			1						2
Chestnut Oak					1											1
Total Number of Trees per Size Class	6			6			5			3			0			20
Number of standing dead trees 6" dbh or greater							1									1

1/100 Ac. Samples:															
List of Common Understory Species 3'-20'				% Canopy Coverage				% Invasive Cover							
American Beech, American Hornbeam, American Holly, Paw Paw				C	N	E	S	W	Total	C	N	E	S	W	Total
				90	65	95	85	90	85	15	2	30	2	2	10
List of Herbaceous Species 0'-3'				% Understory Cover 3'-20'				% Herbaceous/ Woody Cover 0'-3'							
Chain Fern, Greenbriar, Jack in the Pulpit, Christmas Fern, Virginia Creeper				C	N	E	S	W	Total	C	N	E	S	W	Total
				15	30	10	15	40	22	40	80	30	30	40	44
List of Invasive Species								Plot Successional Stage:							
Microstegium, Japanese Honeysuckle								Early-successional upland Tulip Poplar Assoc.							

Comments:
 Total number of tree species > 6": 4

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 4 Plot Size: 30' Date: 6/21/17

Basal Area in sf/acre: 130	Size Class of Trees within sample plot															
Tree Species	# of Trees			# of Trees			# of Trees			# of Trees			Total			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh				> 30" dbh		
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
White Oak										1			1			2
American Beech			1		2	3	3			2						11
Tulip Poplar			3				1									4
Pignut Hickory							1									1
Black Walnut										1						1
Flowering Dogwood			1													1
Total Number of Trees per Size Class	5			5			5			4			1			20
Number of standing dead trees 6" dbh or greater																0

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
American Beech, Tulip Poplar, Paw Paw							C	N	E	S	W	Total	C	N	E	S	W	Total
							85	95	95	95	80	90	2	0	0	2	0	1
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
Hog Peanut, Greenbriar, Jack in the Pulpit, Christmas Fern, Paw Paw, American Beech							C	N	E	S	W	Total	C	N	E	S	W	Total
							40	35	20	20	50	33	20	10	5	5	30	14
List of Invasive Species							Plot Successional Stage: Early-successional upland Tulip Poplar Assoc.											
Japanese Honeysuckle																		

Comments:
 Total number of tree species > 6": 5

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 5 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 130	Size Class of Trees within sample plot															Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Sweetgum					1		1	2								4
American Beech			7				1									8
Black Gum			1													1
White Oak							1			2						3
American Hornbeam			2													2
Virginia Pine							1									1
American Holly			3			1										4
Total Number of Trees per Size Class	13			2			6			2			0			23
Number of standing dead trees 6" dbh or greater				1												1

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, American Holly, American Hornbeam							90	85	95	75	80	85	0	0	0	0	0	0
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Ground Cedar, Jack in the Pulpit, Christmas Fern, American Holly							10	15	10	25	30	18	10	5	40	70	70	39
List of Invasive Species							Plot Successional Stage:											
							Early-successional upland Tulip Poplar Assoc.											

Comments:
 Total number of tree species > 6": 5
 sheet 5 of 16

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 6 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 140	Size Class of Trees within sample plot															Total
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			5		5		3			1						14
Sweetgum							2									2
Tulip Poplar							2			1						3
Red Maple			3													3
Pignut Hickory							1									1
Total Number of Trees per Size Class	8			5			8			2			0			23
Number of standing dead trees 6" dbh or greater							1									1

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, American Holly, Red Maple							90	90	85	95	90	90	2	0	0	0	2	1
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, Jack in the Pulpit, Greenbriar							10	10	25	30	10	17	5	2	10	10	5	6
List of Invasive Species							Plot Successional Stage: Early-successional upland Tulip Poplar Assoc.											
Japanese Honeysuckle																		

Comments:
 Total number of tree species > 6": 4

sheet 6 of 16

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 7 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 100	Size Class of Trees within sample plot															
	Tree Species	# of Trees			# of Trees			# of Trees			# of Trees			Total		
		2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh				> 30" dbh	
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			5		5		4			3						17
Black Gum			2		2		1									5
American Holly			9													9
Southern Red Oak					1											1
Total Number of Trees per Size Class	16			8			5			3			0			32
Number of standing dead trees 6" dbh or greater				1												1

1/100 Ac. Samples:

List of Common Understory Species 3'-20'	% Canopy Coverage						% Invasive Cover					
	C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, American Holly, Sweetgum	90	65	85	95	85	84	0	0	0	0	0	0
List of Herbaceous Species 0'-3'	% Understory Cover 3'-20'						% Herbaceous/ Woody Cover 0'-3'					
American Beech, American Holly	C	N	E	S	W	Total	C	N	E	S	W	Total
	5	50	20	20	15	22	5	10	5	5	10	7
List of Invasive Species							Plot Successional Stage: Early-successional upland Tulip Poplar Assoc.					

Comments:
 Total number of tree species > 6": 3

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 8 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 110	Size Class of Trees within sample plot															Total
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			8				1									9
Southern Red Oak				1	1											2
Northern Red Oak					1		2									3
Black Gum			1													1
Sweetgum			2	4	1		1									8
American Holly			4													4
White Oak					1		1									2
Willow Oak				1												1
Red Maple				1												1
Red Cedar			1													1
Mockernut			5		1											6
Total Number of Trees per Size Class	21			12			5			0			0			38
Number of standing dead trees 6" dbh or greater																0

1/100 Ac. Samples:																			
List of Common Understory Species 3'-20'								% Canopy Coverage				% Invasive Cover							
								C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, American Holly, Red Maple, Mockernut Hickory								85	75	75	85	80	80	0	0	0	0	0	0
List of Herbaceous Species 0'-3'								% Understory Cover 3'-20'				% Herbaceous/ Woody Cover 0'-3'							
								C	N	E	S	W	Total	C	N	E	S	W	Total
American Beech, American Holly, Wild Chive, Greenbriar								10	40	20	30	25	25	2	5	15	10	10	8
List of Invasive Species								Plot Successional Stage:											
								Early-successional upland Tulip Poplar Assoc.											

Comments:
 Total number of tree species > 6": 8

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: A Plot#: 9 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 140	Size Class of Trees within sample plot															
Tree Species	# of Trees			# of Trees			# of Trees			# of Trees			Total			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh				> 30" dbh		
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			8		3		2									13
Black Gum			6													6
Southern Red Oak							4									4
Northern Red Oak				1												1
American Holly			3			2										5
White Oak							2									2
Red Maple			1													1
Mockernut		1														1
Total Number of Trees per Size Class	19			6			8			0			0			33
Number of standing dead trees 6" dbh or greater				1			1									2

1/100 Ac. Samples:

List of Common Understory Species 3'-20'	% Canopy Coverage							% Invasive Cover						
American Beech, American Holly, Red Maple, Black Gum	C	N	E	S	W	Total	C	N	E	S	W	Total		
	90	95	80	95	85	89	0	0	0	0	0	0		
List of Herbaceous Species 0'-3'	% Understory Cover 3'-20'							% Herbaceous/ Woody Cover 0'-3'						
American Beech, American Holly	C	N	E	S	W	Total	C	N	E	S	W	Total		
	30	40	20	20	30	28	0	5	2	5	10	4		
List of Invasive Species							Plot Successional Stage: Early-successional upland Tulip Poplar Assoc.							

Comments:
 Total number of tree species > 6": 6

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: B Plot#: 1 Plot Size: 30' Date: 6/21/17

Tree Species	Size Class of Trees within sample plot															Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Loblolly Pine			1	15			10									26
Sweetgum			25													25
Black Gum			3													3
Big-Tooth Aspen			3		1											4
Red Maple			3													3
Virginia Pine			1													1
Tulip Poplar			1													1
Total Number of Trees per Size Class	37			16			10			0			0			63
Number of standing dead trees 6" dbh or greater																

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, Black Gum, Red Maple, Big-Tooth Aspen							75	85	70	75	75	76	2	0	0	0	2	1
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, Virginia Creeper Greenbriar, American Holly							60	60	60	50	60	58	5	10	5	5	5	6
List of Invasive Species							Plot Successional Stage: Early-successional upland Yellow Pine Assoc.											
Japanese Honeysuckle																		

Comments:
 Total number of tree species > 6": 2

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: B Plot#: 2 Plot Size: 30' Date: 6/21/17

Basal Area in sf/acre: 180	Size Class of Trees within sample plot															Total
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Loblolly Pine				12			15									27
Sweetgum			7													7
Black Gum			1													1
Southern Red Oak			1													1
Northern Red Oak			1													1
Virginia Pine			10		1											11
Total Number of Trees per Size Class	20			13			15			0			0			48
Number of standing dead trees 6" dbh or greater																

1/100 Ac. Samples:

List of Common Understory Species 3'-20'	% Canopy Coverage							% Invasive Cover						
Sweetgum, Black Gum, Red Maple, Southern Red Oak, American Beech, Willow Oak	C	N	E	S	W	Total	C	N	E	S	W	Total		
	70	75	70	80	85	76	0	0	0	0	0	0		
List of Herbaceous Species 0'-3'	% Understory Cover 3'-20'							% Herbaceous/ Woody Cover 0'-3'						
Sweetgum, Greenbriar, American Holly	C	N	E	S	W	Total	C	N	E	S	W	Total		
	60	70	30	50	40	50	5	5	5	10	10	7		
List of Invasive Species												Plot Successional Stage:		
												Early-successional upland Yellow Pine Assoc.		

Comments:
 Total number of tree species > 6": 2

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: B Plot#: 3 Plot Size: 30' Date: 6/22/17

Basal Area in sf/acre: 220	Size Class of Trees within sample plot															Total
	# of Trees 2-5.9" dbh			# of Trees 6-9.9" dbh			# of Trees 10-17.9" dbh			# of Trees 18-29.9" dbh			# of Trees > 30" dbh			
Tree Species	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Loblolly Pine				6			24									30
Big-tooth Aspen			1													1
Red Maple			4													4
Black Gum			1													1
Am. Hornbeam			1													1
Tulip Poplar			5													5
Am. Sycamore			2													2
Honey Locust			1													1
Sweetgum			3		1											4
Black Cherry			1													1
Willow Oak			2													2
Total Number of Trees per Size Class	21			7			24			0			0			52
Number of standing dead trees 6" dbh or greater																0

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, Tulip Poplar Red Maple							80	75	70	80	85	78	0	2	2	2	2	2
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
Poison Ivy, Virginia Creeper, Greenbriar, Sensitive Fern, Christmas Fern, Hog Peanut							C	N	E	S	W	Total	C	N	E	S	W	Total
							30	50	40	35	50	53	5	5	10	5	10	7
List of Invasive Species							Plot Successional Stage:											
Japanese Honeysuckle							Early-successional upland Yellow Pine Assoc.											

Comments:
 Total number of tree species > 6": 2

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: B Plot#: 4 Plot Size: 30' Date: 6/21/17

Basal Area in sf/acre: 200	Size Class of Trees within sample plot															
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Loblolly Pine			2	10			21									33
Sweetgum		2	10													12
American Sycamore			1													1
Tulip Poplar			2													2
Willow Oak			1													1
Black Gum			2													2
Red Maple			1													1
Total Number of Trees per Size Class	21			10			21			0			0			52
Number of standing dead trees 6" dbh or greater				1												1

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, Black Gum, Red Maple, Tulip Poplar							75	80	70	75	70	74	0	0	0	0	2	1
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Sweetgum, Virginia Creeper, Wild Chive Christmas Fern, American Holly, Poison Ivy							30	45	30	40	30	35	5	5	15	10	20	11
List of Invasive Species							Plot Successional Stage:											
Japanese Honeysuckle							Early-successional upland Yellow Pine Assoc.											

Comments:
 Total number of tree species > 6": 1

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: C Plot#: 1 Plot Size: 30' Date: 6/21/17

Basal Area in sf/acre: 140	Size Class of Trees within sample plot															Total
	# of Trees			# of Trees			# of Trees			# of Trees			# of Trees			
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
Crown Position	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			1			1		1								3
Northern Red Oak								1								1
American Hornbeam			3			2	1									6
American Sycamore							2									2
Sweetgum						1	2									3
White Oak			1													1
Tulip Poplar			2				2			1						5
Dogwood			1													1
Red Maple			1				2									3
Total Number of Trees per Size Class	9			4			11			1			0			25
Number of standing dead trees 6" dbh or greater							1									1

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
American Hornbeam, Red Maple, PawPaw							85	95	75	80	85	84	0	2	0	2	0	1
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Jack-in-the-Pulpit, PawPaw, Chainfern, False Nettle, Virginia Creeper							60	20	70	50	20	44	60	10	10	20	80	36
List of Invasive Species							Plot Successional Stage:											
Japanese Honeysuckle							Late-successional floodplain Red Maple Assoc.											

Comments:
 Total number of tree species > 6": 7

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: C Plot#: 2 Plot Size: 30' Date: 6/21/17

Tree Species	Size Class of Trees within sample plot															Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
American Beech			4		1		1									6
Northern Red Oak					1											1
American Hornbeam			1													1
Red Maple									1							1
Paw-Paw			6													6
Tulip Poplar			2				2									4
Sweetgum									1							1
River Birch							1									1
Total Number of Trees per Size Class	13			2			4			2			0			21
Number of standing dead trees 6" dbh or greater				1			1									2

1/100 Ac. Samples:																		
List of Common Understory Species 3'-20'							% Canopy Coverage					% Invasive Cover						
							C	N	E	S	W	Total	C	N	E	S	W	Total
American Hornbeam, Paw-Paw							90	80	80	90	90	84	0	0	0	0	0	0
List of Herbaceous Species 0'-3'							% Understory Cover 3'-20'					% Herbaceous/ Woody Cover 0'-3'						
							C	N	E	S	W	Total	C	N	E	S	W	Total
Jack-in-the-Pulpit, PawPaw, Chainfern, Greenbriar, Sensitive Fern							60	40	40	30	30	40	30	60	20	40	70	44
List of Invasive Species							Plot Successional Stage: Late-successional floodplain Red Maple Assoc.											

Comments:
 Total number of tree species > 6": 6

Forest Sample Plot Field Data Sheet

Property: MD Solar 1 (Shugart) Prepared by: AEA
 Stand #: C Plot#: 3 Plot Size: 30' Date: 6/22/17

Tree Species	Size Class of Trees within sample plot															Total
	2-5.9" dbh			6-9.9" dbh			10-17.9" dbh			18-29.9" dbh			> 30" dbh			
	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	DOM	COD	OTH	
Sweetgum			1				2			1						4
American Holly			5													5
American Hornbeam			10		1											11
Red Maple							4			1						5
Tulip Poplar			3		2		2									7
Black Gum					2											2
American Beech			1		1	1										3
Total Number of Trees per Size Class	20			7			8			2			0			37
Number of standing dead trees 6" dbh or greater				1												1

1/100 Ac. Samples:

List of Common Understory Species 3'-20'	% Canopy Coverage							% Invasive Cover						
	C	N	E	S	W	Total	C	N	E	S	W	Total		
American Hornbeam, Tulip Poplar, American Holly, American Beech, Red Maple, Sweetgum	90	85	90	95	90	90	0	0	0	0	0	0		
List of Herbaceous Species 0'-3'	% Understory Cover 3'-20'							% Herbaceous/ Woody Cover 0'-3'						
Jack-in-the-Pulpit, Paw-Paw, Chainfern, Greenbriar, Sweetgum	C	N	E	S	W	Total	C	N	E	S	W	Total		
	15	20	40	20	30	25	90	30	15	50	80	53		
List of Invasive Species												Plot Successional Stage:		
												Late-successional floodplain Red Maple Assoc.		

Comments:
 Total number of tree species > 6": 6

PHOTOGRAPHIC LOG



Photograph 1: View of Forest Stand A at plot FSA-2.



Photograph 2: View of Forest Stand A at plot FSA-3.



Photograph 3: View of Forest Stand B at plot FSB-1.



Photograph 4: View of Forest Stand B at plot FSB-3



Photograph 5: View of ST-60 in Stand A.



Photograph 6: View of ST-70 in Stand C.



Photograph 7: View of ST-90 in Stand A.



Photograph 8: View of Stand A near FSA-6.



Photograph 9: View of Stand A near FSA-8.



Photograph 10: View of Stand C near FSC-2.



Photograph 11: View of Stand C near FSC-3.

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

April 20, 2018

Steven Wiley
6760 Kylandy Place
Port Tobacco, MD 20677

*Re: Special Exception Hearing; MD Solar 2, LLC, Ripley Road, La Plata,
Maryland; Docket #1391*

Dear Mr. Wiley:

As referenced in our prior correspondence and discussed the outreach meetings our office is pleased to be working with MD Solar 2, LLC, to bring a 27.5 megawatt solar project to the above referenced property. This clean energy project, located off of Ripley, is designed to enhance Maryland's renewable energy portfolio and grow Charles County green economy. SMECO will purchase all generated energy, capacity and Solar Renewable Credits for the next twenty five (25) years helping SMECO fulfill its renewable portfolio obligation, as required by the State.

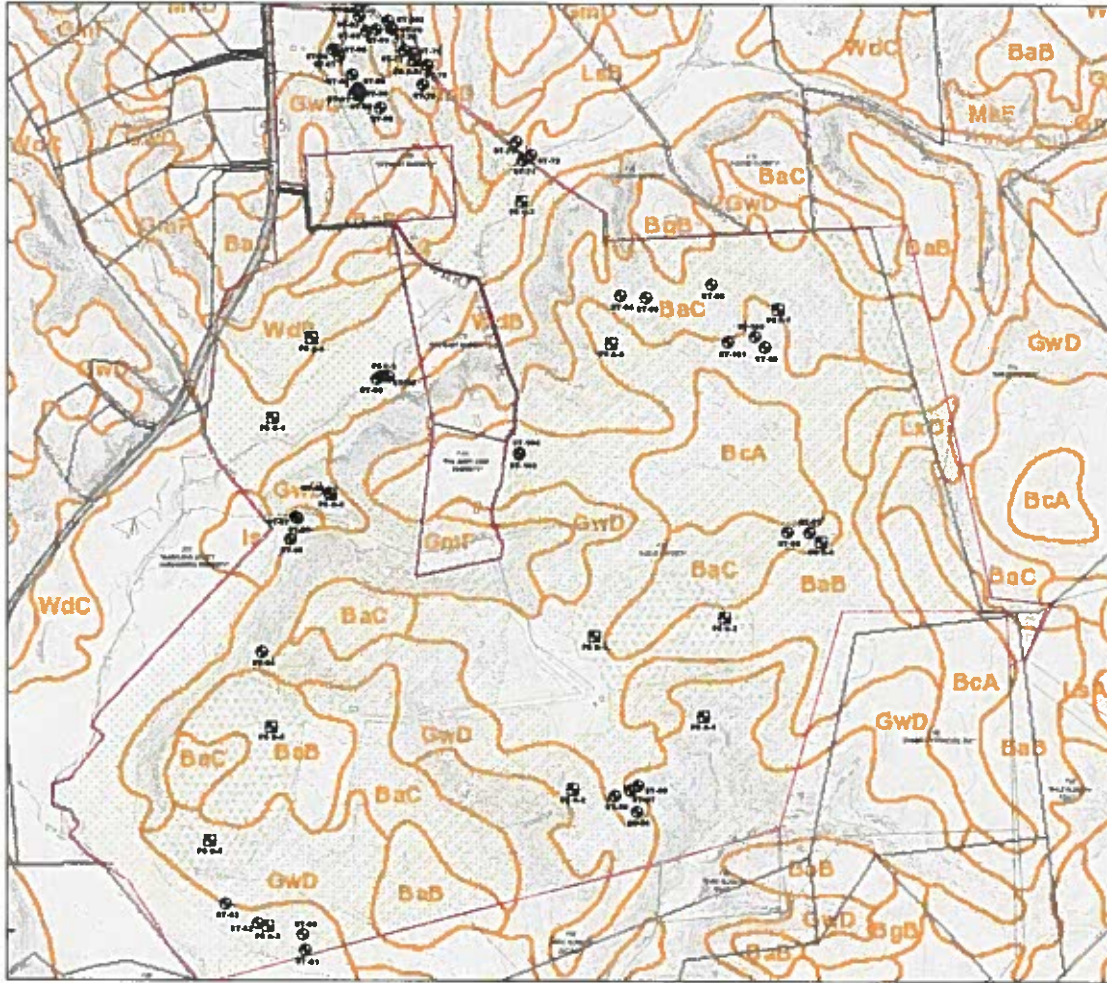
Please find enclosed notice of the hearing for a Special Exceptions before the Charles County Board of Appeals on May 8, 2018 at 7:00 p.m. in the Commissioners Meeting Room of the Charles County Government Building, La Plata, Maryland.

Should you have any questions, please do not hesitate to contact my office at 301-934-7988.

Sincerely,

Sue A. Greer

SAG/dc
Cc: file
Client



LEGEND

- FOREST STAND A (S1, S2)
- FOREST STAND B (S1, S2)
- FOREST STAND C (S1, S2)
- FOREST STAND NAME POINT
- SPRINKLER LINE (S1, S2)
- ROAD CENTER
- ICE MARK

STAND ID	STAND NAME	AREA (Ac)	PERCENT FOREST	PERCENT OPEN	PERCENT WATER	PERCENT BARE	PERCENT UNCLASSIFIED	PERCENT UNMAPPED	PERCENT UNRECORDED	PERCENT UNREGISTERED	PERCENT UNASSIGNED	PERCENT UNIDENTIFIED	PERCENT UNCLASSIFIED	PERCENT UNMAPPED	PERCENT UNRECORDED	PERCENT UNREGISTERED	PERCENT UNASSIGNED	PERCENT UNIDENTIFIED	
ST001	WdC	12.5	85	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST002	GwD	18.2	70	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST003	BaC	25.1	60	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST004	BaB	15.8	55	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST005	BcA	22.3	50	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST006	BcB	10.7	45	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST007	LxB	8.9	30	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST008	MxF	6.4	20	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST009	LxA	4.2	10	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MD SOLAR 1
SHUGART VALLEY PLACE
 LA PLATA, CHARLES COUNTY, MARYLAND

FOREST STAND DELINEATION MAP
 MD SOLAR 1, LLC

DATE: 10/15/2024
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: 1" = 200'

EGS

MD SOLAR 1
 SHUGART VALLEY PLACE
 LA PLATA, CHARLES COUNTY, MARYLAND

FOREST STAND DELINEATION MAP
 MD SOLAR 1, LLC

DATE: 10/15/2024
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: 1" = 200'